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## JACKET

a. Serial No.	f. Foreign Priority	k. Print Claim(s)	p. PTO-1449
b. Applicant(s)	g. Disclaimer	l. Print Fig.	q. PTOL-85b
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other

## SPECIFICATION

- a. Page Missing
- b. Text Continuity
- c. Holes through Data
- d. Other Missing Text
- e. Illegible Text
- f. Duplicate Text
- g. Brief Description
- h. Sequence Listing
- i. Appendix
- j. Amendments
- k. Other

## CLAIMS

- a. Claim(s) Missing
- b. Improper Dependency
- c. Duplicate Numbers
- d. Incorrect Numbering
- e. Index Disagrees
- f. Punctuation
- g. Amendments
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- i. Missing Text
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- k. Other

## MESSAGE

① The following forms are missing from file (not found in PFW system):

Field of Search  
Index of claims  
Issuing Classification.

Please supply.

② Please verify page 2 of claim pages dated 6/24/02. Where should the first 3 lines of this page belongs? Please advise that claim 3 on the previous page already ends with a period. (See attached).

Please advise.

*Thumkyan* initials *MM*.

## RESPONSE

initials

CLAIMS

What is claimed is:

1. An apparatus comprising:

5 at least one stage having a first input terminal that receives a first test voltage, a second input terminal that receives a first reference voltage, a third input terminal that receives a second test voltage, and a fourth input terminal that receives a second reference voltage, said at least one stage having a first output terminal upon which is produced a first test signal that is proportional to said first test voltage, a second output terminal upon which is produced a first reference signal that is proportional to said first reference voltage, a third output terminal upon which is produced a second test signal that is proportional to said second test voltage, and a fourth output terminal upon which is produced a second reference signal that is proportional to said second reference voltage;

10 a switching circuit coupled to said at least one stage, said switching circuit having a first output terminal that is switchably coupled to said first output terminal and one of said third output terminal and said fourth output terminal of said at least one stage, said switching circuit having a second output terminal that is switchably coupled to said first output terminal and one of said third output terminal and said fourth output terminal of said at least one stage; and

15 20 a comparator circuit having a first input terminal coupled to said first output terminal of said switching circuit and a second input terminal coupled to said second output terminal of said switching circuit.

2. The apparatus of Claim 1, wherein said at least one stage is at least one

25 transconductance stage, and wherein said first test signal is a first test current and said second test signal is a second test current, and wherein said first reference signal is a first reference current and said second reference signal is a second reference current.

3. The apparatus of Claim 1, wherein said at least one stage is a differential amplifier and wherein said first test signal, said second test signal, said first reference signal, and said second reference signal are voltage signals.

and wherein said first test signal, and said second test signal are a first test voltage and a second test voltage, and wherein said first reference signal and said second reference signal are a first reference voltage and a second reference voltage.

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4. The apparatus of Claim 2, wherein said at least one transconductance stage comprises:

a first transconductance stage having said first input terminal, said second input terminal, said first output terminal and said second output terminal; and

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a second transconductance stage having said third input terminal, said fourth input terminal, said third output terminal and said fourth output terminal.

5. The apparatus of Claim 2, wherein said switching circuit comprises:

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a first transistor coupled between said third output terminal of said at least one transconductance circuit and said first output terminal of said switching circuit;

a second transistor coupled between said third output terminal of said at least one transconductance circuit and said second output terminal of said switching circuit;

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a third transistor coupled between said fourth output terminal of said at least one transconductance circuit and said first output terminal of said switching circuit; and

a fourth transistor coupled between said third output terminal of said at least one transconductance circuit and said second output terminal of said switching circuit;

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wherein the bases of said first transistor and said fourth transistor are coupled together and the bases of said second transistor and said third transistor are coupled together.

30 6. The apparatus of Claim 5, wherein said switching circuit further comprises: